# POLY-SiAMOLEDs

Thursday, May 24 / 9:00 10:20 am / Ballroom A

Chair:
Hyun Jae Kim, Yonsei University, Seoul, Korea

Co-Chair:
Man Wong, Hong Kong University of Science & Technology, Kowloon, Hong Kong

## 41.1: *Invited Paper:* LTPS Technology for Improving the Uniformity of AMOLEDs (9:00)

*S-K. Hong, B-K. Kim, Y-M. Ha*
*LG.Philips LCD, Gyungsangbuk-do, Korea*

Various techniques have been developed to compensate for the uneven brightness of AMOLEDs using LTPS TFTs fabricated by using excimer-laser crystallization. A voltage-compensation method, current-writing method, and digital-driving method have been evaluated, and every method has its drawbacks even though the uniformity is improved by compensating for the TFT threshold voltage and mobility variations. Recently, a solid-phase-crystallization (SPC) process with dramatic improvements in uniformity and cost has been developed. A 20.1-in. AMOLED has been fabricated successfully using this newly developed crystallization technology.

## 41.2: Microcrystalline-Silicon Technology for AMOLED Displays (9:20)

*T.Arai, N. Morosawa, Y. Hiromasu, K. Hidaka, T. Nakayama, A. Makita, M. Toyota, N. Hayashi, Y. Yoshimura, A. Sato, K. Namekawa, Y. Inagaki, N. Umezu, K. Tsukihara, K. Tatsuki*
*Sony Corp., Kanagawa, Japan*

Microcrystalline-Si TFTs formed by using a dLTA (diode laser thermal anneal) system has been demonstrated. The method realizes uniform and stable current flow in large-area displays. A 27-in.-diagonal AMOLED display for OLED TV mass production was demonstrated.

## 41.3: A Low-Power AMOLED Microdisplay with Ultra-High Pixel Density and Extended Operating Temperature Range (9:40)

*I. Wacyk, O. Prache*
*eMagin Corp., Hopewell Junction, NY, U.S.A.*

A low-power full-color AMOLED microdisplay with an ultra-high pixel density of 2300 ppi and excellent image quality will be reported. Based on a new pixel-driver scheme, a key feature of the display is its built-in temperature-compensation circuitry that achieves instant operation at low temperatures without the need for power-hungry heaters or complex external functionality.

**41.4: AMOLED Based on Silicon-on-Glass (SOG) Technology** **(10:00)**

*J-B. Choi, Y-J. Chang, S-H. Shim, I-D. Chung, K-W. Park, K-C. Park, K-C. Moon, H-K. Min, C-W. Kim*
*Samsung Electronics Co., Ltd., Kyunggi-do, Korea*

*K. Gadkaree, J. Couillard, J. Cites, S-E. Ahn*
*Corning, Inc. Corning, NY, U.S.A.*

Single-crystalline silicon films on glass substrates were used in conventional mass-production lines. The single-crystalline Si layers were transferred to the 370 × 470 glass substrates using a silicon-on-glass (SiOG) technology. A 2.4-in. qVGA AMOLED with integrated circuits were successfully fabricated and will be presented.

**BREAK** **(10:20–10:40)**

**AUTHOR INTERVIEWS** **(5:00–6:00)**